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NOTONERIUM (APOCYNACEAE) LAID TO REST IN THE BORAGINACEAE

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Abstract

Notonerium gossei (Apocynaceae) is shown to be a species of *Heliotropium* (Boraginaceae).

A long standing mystery in the flora of Central Australia has been the precise identity of the monotypic genus *Notonerium* Benth. It was discovered in 1873 by W.C. Gosse during his Central Australian expedition, when he travelled north from Alice Springs to the Reynolds Range and then turned south through the MacDonnell Range to discover Ayers' Rock and the Mann, Tomkinson and Musgrave Ranges which extend along the present South Australian/Northern Territory border (Feeken et al., 1970). Whether or not Gosse recorded the exact locality at which he collected *Notonerium*, it is unknown today, which is unfortunate because Gosse's specimen is possibly the only one of this species ever collected.

Gosse's specimen was given to Dr Richard Schomburgk, Director of the Adelaide Botanic Garden, who in turn sent it to George Bentham at Kew. Apparently Schomburgk did not keep any part of the specimen for himself. Bentham (May 1876 a & b) described and named the new genus *Notonerium* simultaneously in two publications. He gave it the specific name of *N. gossei* (Bentham, May 1876 b), after its discoverer. He placed it in the family Apocynaceae, but with some uncertainty because the specimen lacked mature fruits.

Meanwhile Mueller (1877) reported a second collection of *N. gossei* made by Mr E. Giles in the Musgrave Range. I have not seen Giles' specimen, and do not know whether Mueller's identification was correct. Mueller could not have seen the type of *N. gossei*, which was by then in London.

Stapf (1915) was the first to recognise that *Notonerium* had been placed in the wrong family. He transferred it to the Boraginaceae, making the new combination *Heliotropium gossei* (Benth.) Stapf. Bentham had completely overlooked the distinctively stiff hairs, a feature which the Apocynaceae lack, and which characterises the Boraginaceae. Moreover, Bentham (May 1876 b) had observed that the ovary was apparently 4-locular but speculated that this may have been "the moieties of 2 carpels with deep dorsal furrows between the ovules". The Apocynaceae have an ovary of two carpels and only one or two cells, whereas the Boraginaceae have an ovary of two carpels usually divided into four cells by false septa. Stapf observed that the type of *N. gossei* was "very scanty", certainly no exaggeration, and charitably suggested that this accounted for its placement in the wrong family. Unfortunately Stapf's new combination was overlooked by Australian botanists and subsequent flora treatments (Black 1926, 1957; Jessop et al., 1981) use the original name of *Notonerium gossei* and retain the genus in the Apocynaceae. Even the compilers of important reference works such as Farr et al. (1979), Jackson et al. (1893-1981) and Willis (1973) seem to have overlooked Stapf's paper. Acting on advice received from the present author this has been rectified in Morley and Toelken (in press).

In recent years, the enigma of a genus known perhaps only from the type collection,

with no precise locality, has come to the attention of conservationists. Currently it is regarded as possibly threatened but insufficiently known for its exact status to be determined (Leigh et al., 1981).

Following a number of recent enquiries about *Notonerium* at the Adelaide (AD) herbarium, the Chief Botanist, Dr John Jessop, asked me to locate its type at Kew (K) and check its identity. A cross reference in the Kew herbarium from the Apocynaceae to the Boraginaceae led me to the type (Fig. 1) and Stapf's (1915) paper in which he made the new combination, *Heliotropium gossei.*

Stapf (1915) states that *H. gossei* has affinity with *H. tenuifolium* R. Br. but differs in being less canescent, in having the stamens inserted much lower on the corolla tube, in the capitate shape of the stigma, and in the nutlets being minutely and sparsely setose. In checking the diagnosis, I found that the type material of *H. gossei* is indeed very scanty. The specimen (Fig. 1) appears to be immature, just coming into flower. Many branchlet apices have been broken off, and there is an envelope attached to the sheet containing loose fragments of several dissected flowers but I could find no style or stigma, and no mature fruits. On the last character there is a curious inconsistency between the papers of Bentham (May 1876 a & b) and that of Stapf (1915). Bentham

Fig. 1. Holotype of *Notonerium gossei* Benth. in K (= *Heliotropium gossei* [Benth.] Stapf).

laments a lack of mature fruit on the type specimen, whereas Stapf describes and illustrates nutlets. I can now find no such nutlets on the specimen.

The characters of the insertion of the stamens, the indumentum and the shape of the stigma (as illustrated by Bentham [May 1876 b] and Stapf [1915]) do indeed separate *H. gossei* from *H. tenuifolium*. At Kew, there is a large collection of specimens under the name *H. tenuifolium* (including the type) showing a great deal of heterogeneity, but none match the type of *H. gossei*. The type of *H. gossei* does not key out nor does it fit the descriptions of any species in the treatment of *Heliotropium* in Jessop et al. (1981). Thus it appears that *H. gossei* may be a distinct species, although it is essential to match the type with another, better specimen before its identity and rarity can be finally resolved. However it is quite clear that *Notonerium* must fall into the synonymy of *Heliotropium*.

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